



CVE-2020-15190

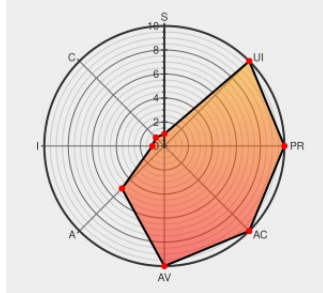
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CVE-2020-15190 - advisory for GHSA-4g9f-63rx-5cw4

[Source: Mitre](#)[Source: NIST](#)[CVE.ORG](#)[Print: PDF](#)

CVSS:31/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:N/A:L



Certain versions of [Tensorflow](#) from [Google](#) contain the following vulnerability:

In Tensorflow before versions 1.15.4, 2.0.3, 2.1.2, 2.2.1 and 2.3.1, the `tf.raw_ops.Switch` operation takes as input a tensor and a boolean and outputs two tensors. Depending on the boolean value, one of the tensors is exactly the input tensor whereas the other one should be an empty tensor. However, the eager runtime traverses all tensors in the

output. Since only one of the tensors is defined, the other one is `nullptr`, hence we are binding a reference to `nullptr`. This is undefined behavior and reported as an error if compiling with `-fsanitize=null`. In this case, this results in a segmentation fault. The issue is patched in commit `da8558533d925694483d2c136a9220d6d49d843c`, and is released in TensorFlow versions 1.15.4, 2.0.3, 2.1.2, 2.2.1, or 2.3.1.

CVE-2020-15190 has been assigned by [security-advisories@github.com](#) to track the vulnerability - currently rated as **MEDIUM** severity.

Affected Vendor/Software: [tensorflow](#) - **tensorflow** version < 1.15.4

Affected Vendor/Software: [tensorflow](#) - **tensorflow** version >= 2.0.0, < 2.0.3

Affected Vendor/Software: [tensorflow](#) - **tensorflow** version >= 2.1.0, < 2.1.2

Affected Vendor/Software: [tensorflow](#) - **tensorflow** version >= 2.2.0, < 2.2.1

Affected Vendor/Software: [tensorflow](#) - **tensorflow** version >= 2.3.0, < 2.3.1

CVSS3 Score: **5.3 - MEDIUM**

Attack Vector	Attack Complexity	Privileges Required	User Interaction
NETWORK	LOW	NONE	NONE
Scope	Confidentiality Impact	Integrity Impact	Availability Impact
UNCHANGED	NONE	NONE	LOW

CVSS2 Score: 5 - MEDIUM

Access Vector	Access Complexity	Authentication
NETWORK	LOW	NONE
Confidentiality Impact	Integrity Impact	Availability Impact
NONE	NONE	PARTIAL

CVE References

Description	Tags	Link
Fix undefined behavior in `tf.raw_ops.Switch` in eager mode. · tensorflow/tensorflow@da85585 · GitHub	Patch Third Party Advisory github.com text/html	 MISC github.com/tensorflow/tensorflow/commit/da8558533d925694483d2c136a9220d6d49
Segfault in tf.raw_ops.Switch in eager mode · Advisory · tensorflow/tensorflow · GitHub	Exploit Third Party Advisory github.com text/html	 CONFIRM github.com/tensorflow/tensorflow/security/advisories/GHSA-4g9f-63rx-4
Release TensorFlow 2.3.1 · tensorflow/tensorflow · GitHub	Third Party Advisory github.com text/html	 MISC github.com/tensorflow/tensorflow/releases/tag/v2.3.1
[security-announce] openSUSE- SU-2020:1766-1: moderate: Security update f	lists.opensuse.org text/html	 SUSE openSUSE-SU-2020:1766

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Related QID Numbers

[981476](#) Python (pip) Security Update for tensorflow-gpu (GHSA-4g9f-63rx-5cw4)

Known Affected Configurations (CPE V2.3)

Type	Vendor	Product	Version	Update	Edition	Language
Application	Google	Tensorflow	All	All	All	All
Operating System	Opensuse	Leap	15.2	All	All	All
Application	Tensorflow	Tensorflow	All	All	All	All
Application	Tensorflow	Tensorflow	All	All	All	All
cpe:2.3:a:google:tensorflow:*.***.*:*.***.*						
cpe:2.3:o:opensuse:leap:15.2:*.***.*:*.***.*						

cpe:2.3:a:tensorflow:tensorflow:*.*.*.*.*.*.*.*
cpe:2.3:a:tensorflow:tensorflow:*.*.*.*.*.*.*.*

```
cpe:2.3:a:tensorflow:tensorflow:*:*:*:*:*:*:*:*
```

No vendor comments have been submitted for this CVE

Social Mentions

Source	Title	Posted (UTC)
🐧 @LinInfoSec	Tensorflow - CVE-2020-15190: github.com/tensorflow/ten...	2021-08-17 14:46:20

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